

## MINUTES OF DOT-AGC BRIDGE DESIGN SUBCOMMITTEE MEETING

The DOT-AGC Joint Bridge Design Subcommittee met on March 27, 2001. Those in attendance were:

Tim Rountree	State Bridge Design Engineer (Co-Chairman)
Berry Jenkins	Manager of Highway Heavy Division, Carolinas Branch AGC (Co-Chairman)
Ron Shaw	Lee Construction Company of Carolinas
Michael Dane	Dane Construction, Inc.
Greg Nelson	S. T. Wooten
Kevin Burns	R. E. Burns & Sons Co.
Ellis Powell	State Bridge Construction Engineer
Greg Perfetti	Assistant State Bridge Design Engineer
Ricky Keith	Assistant State Bridge Design Engineer
Paul Lambert	Structure Design Project Engineer
Rodger Rochelle	Structure Design Project Design Engineer (Secretary)

The following items of business were discussed:

1. The minutes of the January 30, 2001 meeting were accepted.
2. *Temporary Access PSP*

Mr. Rochelle stated that there had been no comments since the last meeting on the proposed Special Provision for Temporary Access. After a brief final review of the Special Provision, the committee confirmed that it should be implemented. Mr. Rochelle anticipated an effective letting date of July 2001.

3. *Sound Barrier Wall Update*

Mr. Rochelle updated the committee on the status of new sound barrier wall standard drawings. Structure Design will offer three alternate pile spacings on the plans. All design details will be on the plans. No design effort will be required of the Contractor other than that needed to determine the appropriate size and number of precast panels. At this time, the drawings do not attempt to eliminate the submittal of working drawings. Mr. Lambert stated that the delay in the review of sound barrier walls is often attributable to value engineering or awaiting the final survey and not the working drawing review. After considerable discussion, it was decided to continue with the current approach and later identify those items that can be checked by the Resident Engineer and those that still require a working drawing submittal.

Mr. Shaw asserted that the survey of the groundline should be the responsibility of the Contractor only if the job is contract survey. After discussion, Mr. Powell agreed that the Resident Engineer would conduct the final groundline survey if it were a Department survey project.

#### 4. *Standard Shoring Design Update*

No representatives of the Soils and Foundation Section were present and therefore this topic will be deferred to the next meeting.

Mr. Burns stated that recently it seems that the pay items for “Temporary Shoring” and “Temporary Shoring – Barrier Supported” have been used incorrectly. This designation is determined by the Traffic Unit and should be brought to their attention.

#### 5. *Cored Slab Top-Down Construction*

Mr. Perfetti announced that all cored slab structures constructed from the top down would now be designed for an HS25 loading and limited to spans of 50 ft. This policy will accommodate the typical crane loads needed for top-down construction. This span limit may be reduced further if it proves necessary for installation of concrete piles. In addition, the imposed limits on concrete stress due to the crane loads have been relaxed to the AASHTO allowable stresses.

Mr. Lambert outlined the considerations made when reviewing crane load distribution to cored slab units. Typically, a factor of 0.30 is used for lateral distribution of outrigger loads to any one cored slab. When the crane is operating at near capacity, a maximum outrigger load of 70% of the total load is applied under the critical corner, while 15% of the load is applied to each of the adjacent corners. No load is assumed at the opposite corner from the direction of critical boom.

Additionally, when using a crawler crane, an 8" thick timber mat will be the minimum required. Otherwise, when using a truck mounted crane, timber mats may not be adequate, especially when operating near the crane's capacity. In this case, multiple spreader HP shapes will be required to distribute the loads. These spreader beams must be shimmed with wood to effectively distribute the loads to at least 5 cored slab units per outrigger.

#### 6. *Lifting Holes in Piles*

Mr. Powell reported that, at the Hickory AGC Conference, a Contractor asked about the possibility of drilling pickup holes in pile flanges. The approximately 2" diameter hole is typically located in the web within 6 ft. of the end of the pile. Pile splices can result in multiple holes in various locations along the pile. The Structure Design Unit will investigate this request.

#### 7. *Barrier Rail Transition Update*

Mr. Rochelle stated that the trial project for the barrier rail transition to satisfy NCHRP 350 has been delayed until June 2001. Pending the outcome of this trial project, a secondary transition detail may be developed.

8. *Division 4 Standard Specifications*

Mr. Rochelle distributed a copy of the draft Division 4 of the NCDOT Standard Specifications. Mr. Rochelle asked for comments within two weeks as the document is in final preparation for printing. At this time, it is anticipated that the new Standard Specifications will be effective with the January 2002 letting.

9. *Other*

i. *Unsuitable Material*

Mr. Gattis stated that recently unsuitable material was encountered beneath an end bent. The excavation of this material was deemed incidental by the Resident Engineer while it should have been considered Extra Work.

ii. *Telescoping Casing*

Mr. Powell stated that telescoping casing for drilled shafts shall be removed from the inside out to maximize the quality of drilled piers and minimize the caving of soil in these shafts. In the past, removal of the outer shaft first has been allowed. In the future, through the drilling sequence submittal process, the Contractor will be alerted to the requirement to remove telescoping casing from the inside out.

iii. *Drilled Shaft Spoils*

Mr. Jenkins emphasized that it is ultimately the Prime Contractor's responsibility to ensure that the requirements to contain drilled shaft spoils and water are met. This excavated material cannot be released directly into the water. Often, the silt basins are designed by the Resident Engineer and are too small to fully contain the material. The Resident Engineers should be alerted as to the primary purpose of these basins.

iv. *Elimination of Working Drawing Submittals*

Mr. Powell reaffirmed the ongoing effort to reduce the number of submittals required of the Contractor; specifically mentioning sole plates and sidewalk cover plates.

v. *Armored Evazote Joints*

Mr. Powell stated that some future plans would probably include evazote joints with elastomeric concrete but without the armor. The Bridge Maintenance Unit has recently reported satisfactory performance of this type of joint.

vi. *Next Meeting*

The next meeting is scheduled for May 23<sup>rd</sup> at 10:00 am in the Structure Design Unit Conference Room C. As future meetings will tentatively be held on the last Wednesday of every other month, the following meeting will be held July 25<sup>th</sup>.

vii. *Fiber Reinforced Concrete*

Mr. Powell reported recent cracking in fiber reinforced slope protection. Since a reduction in the cost of slope protection has not occurred, the option for fiber reinforced concrete will be eliminated. Instead welded wire fabric will be required with an option to lap the wire or use dowels between strips.